

Maximum principle for stochastic optimal control problem with delay

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Abstrakt

We consider optimal control problem for stochastic evolution system with time delay in infinite dimensional settings. The state equations is an Ito-type stochastic differential equation in Hilbert space H , driven by infinite dimensional Q -Wiener proces with finite trace covariance oprator Q . The leading term is a closed operator A , generating analytic semigroup $S(t) : H \rightarrow H$. The control parameter, which is assumed to be adapted stochastic process, enter both to the drift and the diffusive terms and both terms depend additionally on the delayed state variable. We establish stochastic maximum principle for optimal control of such system. The associated adjoint process is an anticipated backward stochastic equation (ABSDE).